



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,468	11/21/2003	Kazuma Natsume	11-205	8123
23400	7590	09/29/2005	EXAMINER	
POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191			PIHULIC, DANIEL T	
			ART UNIT	PAPER NUMBER
			3662	

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,468

Applicant(s)

NATSUME ET AL.

Examiner

Daniel Pihulic

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 9-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

PD

1. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a transmission antenna that can radiate in to an unsectioned detection area) is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant additionally argues that the examiner has cited the same element (10) as teaching two separate elements. Element (10) is a signal processing unit (i.e. a computer) which calculates the phase difference between the echoes received on channels R1 and R2 and the direction corresponding to the phase difference. Figure 3 clearly shows the processor (10) connected to control unit (1) to detect which transmitter beam (and thus which range of azimuthal angles) the target resides. Element (10) also combines the direction corresponding to the phase difference with the detected azimuthal angle range to provide a corrected unambiguous direction.

Further claim 1 does not recite the three devices are separate and from applicants' drawings it appears the function of all three devices is performed by a processor also labeled "10".

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 6 and 8 is rejected under 35 U.S.C. 102(b) as being anticipated by US6246359. The US6246359 reference discloses the utilization of an apparatus for detecting a direction of a target to be detected by transmitting and receiving radio waves through a plurality of transmission/reception channels causing a phase difference (see Figure 1) in signals to be received through the transmission/reception

Art Unit: 3662

channels and calculating the direction based on the phase difference, at least one of transmission (5) and reception (7a & 7b) antennas being provided to form the plurality of transmission/reception channels, the apparatus comprising

a direction calculating device (10) configured to calculate the direction of the target based on the phase difference in the received signals on the assumption that the phase difference is within a range of $-\pi$ to $+\pi$;

a range determining device (10) configured to determine that the target exists in any of azimuthal angle ranges each corresponding to ranges defined by $(2m-1)\pi$ to $(2m+1)\pi$ {for $-2 \leq m \leq 2$ see FIG. 3} by detecting which transmitted beam is reflected; and

a direction correcting device (10) configured to correct the direction calculated from the phase difference with the detected transmitted beam direction (see column 3, lines 45-60).

With regards to claim 5, Fig. 3 discloses a plurality of transmitting and receiving antennas.

With regards to claim 6, Fig. 3 discloses a plurality of receiving antennas linearly arranged and equally spaced.

With regards to claim 8, column 3, line 65, discloses the utilization of extremely high frequency (EHF) radio waves.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US6246359 in combination with US4160974. The US6246359 reference discloses the utilization of an apparatus for

Art Unit: 3662

detecting a direction of a target to be detected by transmitting and receiving radio waves through a plurality of transmission/reception channels causing a phase difference (see Figure 1) in signals to be received through the transmission/reception channels and calculating the direction based on the phase difference, at least one of transmission (5) and reception (7a & 7b) antennas being provided to form the plurality of transmission/reception channels, the apparatus comprising

a direction calculating device (10) configured to calculate the direction of the target based on the phase difference in the received signals on the assumption that the phase difference is within a range of $-\pi$ to $+\pi$;

a range determining device (10) configured to determine that the target exists in any of azimuthal angle ranges each corresponding to ranges defined by $(2m-1)\pi$ to $(2m+1)\pi$ {for $-2 \leq m \leq 2$ see FIG. 3} by detecting which transmitted beam is reflected; and

a direction correcting device (10) configured to correct the direction calculated from the phase difference with the detected transmitted beam direction (see column 3, lines 45-60) as recited in parent claim 6.

With regards to claim 7 US6246359 reference discloses mixers (8a & 8b); amplifiers (7a & 7b); and analog-to-digital converters (9a & 9b). The difference between the US6246359 reference and claim 7 is that the claim recites mixing and then amplifying instead of amplifying and then mixing. The US4160974 reference teaches that it was well known in the art to mix and then amplify. It would have been obvious to modify the US6246359 reference to mix and then amplify as motivated by the US4160974 reference to enable the US6246359 system to utilize a lower power mixer to reduce cost.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed,

Art Unit: 3662

and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Claims 2-4 and 9-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Pihulic whose telephone number is 571-272-6977. The examiner can normally be reached on Tuesday through Thursday from 5:30 a.m. to 4 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza, can be reached on 571-272-6979.


The fax phone numbers for the organization where this application or proceeding is assigned are:

571-273-8300 for official responses, and

571-273-6977 for unofficial communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-3600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel Pihulic
Primary Examiner
Art Unit 3662